

Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A negative pressure booster comprising; ~~at least~~ a valve body which is reciprocally disposed ~~in the~~ inside of a shell,

a power piston which is mounted in the valve body and partitions ~~the~~ an interior of the shell into a constant pressure chamber into which negative pressure is introduced and a variable pressure chamber into which atmosphere is introduced at ~~the~~ a time of operating the negative pressure booster,

a valve plunger which is connected to an input shaft and is slidably disposed ~~in the~~ inside of the valve body,

a vacuum valve which controls the communication or the interruption between the constant pressure chamber and the variable pressure chamber, and

an atmospheric valve which controls the interruption or the communication between the variable pressure chamber and at least ~~the~~ atmosphere due to the operation of the valve plunger, and

~~wherein the negative pressure booster further includes~~

a stroke shortening mechanism which shortens a manipulation stroke quantity of the input shaft in an output region with an output larger than a given output, than the manipulation stroke quantity of the input shaft in the output region with the output larger than the given output when the manipulation stroke quantity of the input shaft is changed at a change rate of the manipulation stroke quantity of the input shaft with respect to the output in an output region with an output equal to or below the given output,

wherein the stroke shortening mechanism is atmospheric valve opening quantity increasing means which is operated in the output region with the output larger than the given output and increases a valve opening quantity of the atmospheric valve larger than the valve opening quantity during a usual operation, and the operation of the atmospheric valve opening quantity increasing means is

controlled in response to pressure of the variable pressure chamber corresponding to the input.

2-3. (Canceled)

4. (Currently amended) A negative pressure booster according to claim [[3]] 1, wherein the vacuum valve includes a valve element and a vacuum valve seat on which the valve element is detachably seated and, the atmospheric valve includes the valve element and an atmospheric valve seat on which the valve element is detachably seated, and the atmospheric valve opening quantity increasing means includes a valve seat member which has the vacuum valve seat mounted on one end side thereof, and

wherein the valve seat member is mounted in the valve body movably between a first position which is positioned in the output region with the output equal to or below the given output and a second position which is positioned in the output region with the output larger than the given output, and the a movement of the valve seat member is controlled in response to the pressure of the variable pressure chamber.

5. (Currently amended) A negative pressure booster according to claim 4, wherein the movement of the valve seat member is controlled in response to the a pressure difference between the variable pressure chamber and the constant pressure chamber.